

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Marc LIEVEN

Examiner: BITAR, NANCY

Serial No.: 10/568,350

Group Art Unit: 2624

Filed: OCTOBER 23, 2006

Confirmation No.: 2658

Title: **METHOD FOR THE REPRESENTATION OF 3D IMAGE DATA**

RESPONSE

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

The following is responsive to the Office Action mailed on June 10, 2009.

For purposes of clarity, the claim can perhaps be understood by discussion of an encompassed embodiment, whereby the differences over the prior art will be even clearer.

The claim references data representing a three dimensional object (3-D data). The method involves not presenting such 3-D data directly, but rather presenting on a monitor projection data which represents a two dimensional projection of the same object. This 2-D projection is not a simple 2-D version in a particular plane, for instance, but rather as stated in the claim, is a computational superimposition of multiple image planes. One can think of an example of such a 2-D projection as the familiar x-ray panorama photograph of an entire patient jaw, typically made by dentists. Such computationally superimposed 2-D images provide professionals such as dentists a good overlook of the entire jaw and are easy to handle. However, of course, in such a 2-D image, detail is lost since the 3-D data set is no longer presented in the image.

In the claimed method, a sub area can be selected from the 2-D projection in which an image with more detail for the sub area is presented while the 2-D overall projection is still present on the monitor. Thus, a kind of image-in-image presentation is involved where the overall 2-D image (superimposition of multiple image planes) is presented and within such image a more detailed image of a sub area is also presented which more detailed image contains different information than the 2-D

image itself. As indicated in claim 2, the detailed image is generated from the 3-D image data of the object from which the 2-D projection is generated. The references in no way can be combined to arrive at this method.

Delegacz shows three types of images. In one, 2-D-CT slices are compiled into a sequence for achieving a 3-D fly-through effect. In addition, Delegacz shows conventional 3-D-surface rendering images or 3-D volume rendering images. None of these image types is the same as or suggest in any way the 2-D projection recited in the claims which comprises a computationally superimposed set of multiple image planes.

Thus, in the examiner's discussion of applicants' prior arguments in the middle of page 3, it is not true that Delegacz teaches both the 3-D object data set and the 2-D projection data set.

Cheng-Sheng also is far removed from the recited 2-D projection image. It shows only the cutting out from a 3-D image of a subsection with the subsection's own 3-D data. Thus the result is the removal from a conventional 3-D image of a portion of that 3-D image, leaving behind a subtraction of the removed 3-D data set from the original total 3-D data set. In other words, a 3-D sub volume is removed from a 3-D volume. This bears no relationship to the claimed method.

As can be seen, no combination of the two references produces the recited features of the method or system whereby a displayed 2-D data set is composed of computationally superimposed multiple images, and within this corresponding image, sub areas are selected for which 3-D images are displayed within the context of the overall 2-D image. This invention provides an interactive detailed image within an overview image where the detailed image can be moved around within the overview to provide detail at a desired sub area.

The examiner's comments regarding zooming in or zooming out in the cited Delegacz reference is irrelevant because zooming is a completely different functionality from that described above and recited in the claims.

As for the examiner's refusal to give weight to the preamble, this is clearly unjustified in this case. The controlling case law is not represented by the very old decisions cited by the examiner. Rather, the Federal Circuit has summarized the case law on this issue, in, e.g., *Catalina Marketing International v. Coolsavings.com*, 62 USPQ2.d 1781 (Fed. Cir. 2002). In this case, the Federal Circuit summarizes situations where preambles are to be given weight. Several of these mandate that the preamble must be given weight in the current claims. One of these situations is where there is use of a "preamble phrase for antecedent basis" (at 62 USPQ2.d at 1785). This is true in the situation here where, e.g., the "image data (1) that represents a 3 dimensional object (7) in a space" is referred to in

dependent claims, thereby using it as antecedent basis. See, e.g., claim 2. Moreover, the preamble is to be given weight where it is essential to understand terms used in the claim body (at 61 USPQ2.d 1785) which is clearly the case here where reference to “the object (7)” is made in the body of claim 1 and reference to projections and images all relate to this very same object. Consequently, the preamble of the claim must be given weight. In any event, irrespective of whether the preamble is given weight, the prior art rejections are unsound.

The Commissioner is hereby authorized to charge any fees associated with this response to Deposit Account No. 13-3402.

Respectfully submitted,

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